DATA PROCESSING DIGEST

1140 South Robertson Blvd., Los Angeles 35, California

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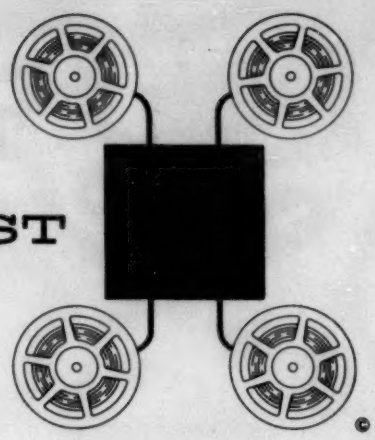

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General Information

NEW ACCOUNTING CONCEPT BASED ON "ASSEMBLY-LINE" PROCESSING

MANAGEMENT AND BUSINESS AUTOMATION, February 1961; pages 22-24, 26, 34

The American Bosch Division of American Bosch Arma Corporation has designed a continuous flow operation for the handling of accounting. The Continuous Flow Modular Accounting (CFMA) system is based on modules of information expressed in accounting terms, constructed from basic line-items of information from the entire manufacturing operation. Careful programing allows the information modules to be updated in seconds. A trial balance can be run at any time, and current reports are available upon demand. The task force that designed the system adopted a set of four ground rules for the accounting system: 1) Only information necessary for planning and operating the business would be gathered; 2) forecasts, schedules, budgets, and orders would be prepared in standard accounting form so that reports of operations could be readily reconciled with plans; 3) reports would be restricted to the kind of information set forth in planning and ordering documents; and 4) the reports would be compared with planning, providing a closed loop of planning, action, reporting and replanning. These ground rules helped curb the tendency to add information to the system and kept a tie-in between planning and reporting for the continual improvement of both.

The planning information needed consisted of nine major items: sales forecasts and loadings; branch inventory and factory shipment schedules; manufacturing inventory and production schedules; capital expenditure budgets; manpower budgets; departmental expense budgets; forecast profit and loss statements; pro forma balance sheets; cash flow plans. It was found that several hundred reports could be eliminated and many accounts combined, resulting in a new chart of accounts that was better balanced and much simplified.

Each planning document and report consisted of a specific number of items constructed in accounting terms. All of the line items were compatible, because the planning items conformed with reporting items in content, timing format, and summary groupings. Altogether 180,000 information modules were constructed for control of the plant.

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Each module of information is stored only once in the IBM Ramac 305 memory (the only high speed random access memory available at the time--other equipment can now be adapted to the modular system). When transactions occur, new information updates stored activity summaries and balances. Each transaction is posted to the stored modules it affects.

Reports are prepared on demand by "trigger decks" of punched cards. Budget information, which changes from period to period, is entered by means of these trigger decks. While the appropriate line is being sought by the computer during the reporting cycle, the budget information in the trigger deck is being stored. During the print-out cycle, performance is compared with budget, the difference is calculated, and the three figures are presented together.

THE EFFECT OF ELECTRONIC DATA PROCESSING ON AUDIT PROCEDURES

Lansdale Boardman, Scovell, Wellington & Co., New York City
SYSTEMS AND PROCEDURES, January/February 1961; pages 29-35

"An auditor is not guaranteeing figures or pursuing criminals. He is assuring himself that the company's accounting system is designed so that reasonable methods are used to produce financial summaries." To do his job, the auditor relies on two tools: 1) the review of the effectiveness of internal control, and 2) the use of selected test cases to find out what steps are being performed in specific cases.

In an EDP system the basic audit practices remain unchanged. However, certain aspects of the auditor's job have changed radically. For example, in the matter of accuracy--when a computer makes a rare mistake, it is likely to apply that error to a whole series of items. Also, it is possible for operators, who are not as familiar with the use of company accounts as a bookkeeper, to allow unauthorized data to be run, to run some data twice and other data not at all. And there is always the possibility of errors in the master data.

Auditor's rules for the computing center

The auditor should, therefore, establish some rules for the computing center. A man in the computing center should never be able to change an item or procedure without consulting another department. This will help eliminate errors made in perfectly good faith. An employee from a related department may not run an item through the computing center independently. Controls over the distribution of output reports will help the appropriate departments know what is happening to their data. There should be prompt feedback of input data to the foreman who is responsible for the operation so that he can catch any obvious errors before they get into the system.

The auditor should make his tests during or immediately following the processing of the data for a selected period and should be sure that the data is retained for a long enough time to permit him to refer to it during his test work. Reference to source documents may pose a problem because the EDP department may store them in batches;

however, code identification of the batches or carbon copies of source documents may suffice. The detailed information on inventory needed by the auditor may prove to be uneconomical for the computer system, in which case a continuous physical inventory count throughout the year may replace the traditional complete annual physical inventory.

New auditing techniques in an EDP system are the machine logic checks included in the program which may be designed to apply only under specified conditions. The program may be designed to question impossible codes, and to identify files by means of tape labels. Batch controls and hash totals may be inserted to help the auditor, in addition to normal accounting proof totals. Item counts help where dollar totals are unobtainable.

Use the computer for random audits

The auditor can use the computer directly as a tool in the audit work by programing it to select random items for audit tests, or to pull out all cases of certain specific types for special audit attention. The auditor can also use the computer to run trial balances under his supervision or to prepare certain types of figures such as gross profit figures by product, or average hourly rates by department. Much of this testing can be done by means of test decks after he has reviewed the normal requirements of the system.

Because of the auditor's involvement with the computing system, it is essential that he be a part of the planning team. He should, however, delay his review of the system until the general form of logic is established so that he will not waste his time reviewing a program that the installation team later decides is unsatisfactory for operating reasons.

POTENTIAL OF AUTOMATIC DATA PROCESSING IN THE FEDERAL GOVERNMENT

Joseph A. Vignali, U.S. General Accounting Office
N.A.A. BULLETIN, February 1961; pages 63-72

The number of EDP systems used for business-type applications in government agencies has grown in the past six years from eight to 540 with another 106 being installed. While the early stress was on savings, "more attention is now being given in the preparatory stages of automatic data processing to effecting a more meaningful system designed to enable electronic equipment to provide management needs more fully with more useful information."

Computers lend themselves well to centralization and integration of data processing functions of many of the larger Federal agencies. "To effect substantial improvement in this area requires an approach in which all functions of various subdivisions are viewed as an interrelated whole. The emphasis should be placed on management objectives and informational requirements. Planning for an integrated system includes comprehensive systems analysis, requiring ample resources in men and time.... Top-level support is required at every stage of the development."

Inter-agency EDP would be more efficient

Coordinated effort among Federal agencies means that work performed as a necessary end product by one agency may be used as input for another. For example, the Veterans Administration Department of Veterans Benefits will provide a payment tape which will be forwarded to the Treasury Department to be used for writing veterans' insurance checks. A geographical code will be included on the tape so that the checks will be sorted by states and larger cities for the post office.

Integration between government agencies and private industry is being investigated. Some private firms are now exchanging data on magnetic tape with the Department of Defense. Another possibility for federal agencies is the use of computer centers for those departments whose data processing needs do not warrant full-time use of a computer. The Internal Revenue Department expects to have a complete automatic data processing system which would "permit the checking of data contained in the various types of information returns to the information reported on tax returns. The Internal Revenue Service would maintain a single debit or credit balance for each taxpayer for all types of tax liabilities, such as income, excise, and withholding, and would present a net bill or refund. The Internal Revenue Service hopes to start the first automatic data processing service on a pilot basis soon." The entire program will take from eight to ten years to complete.

THE TOTAL SYSTEMS CONCEPT

Edward L. Lach, Western Union Telegraph Co., New York
SYSTEMS AND PROCEDURES, November 1960; pages 6, 7

Fast accurate flows of input communications tied into electronic computers, and the very latest in display devices are essential for obtaining the objectives of the total system concept. "The present practice of putting sales managers, controllers, treasurers, purchasing agents, production planning managers, and quality control managers into separate offices and departments will be changed drastically. The total systems concept requires that these employees function as a team, working together, analyzing the company's productive efforts, the effect on inventory, the company's sales efforts, and the associated effect on inventory and capital investment." Sales and distribution methods will probably give way to product display rooms.

MARYLAND HIGH SCHOOL STUDENTS LEARN COMPUTER PROGRAMMING

COMPUTERS AND AUTOMATION, February 1961; pages 5B, 6B

A 15-week Saturday morning course was sponsored by the Washington, D.C. Chapter of A.C.M. and the Board of Education of Montgomery County, Maryland, for 26 juniors and seniors from Bethesda-Chevy Chase High School. The group learned to program the IBM 709, and ran their programs on the computer at the IBM Space Computing Center. The course included history of computers, use of binary and octal number systems, analysis of typical problems, fundamentals of programing, and applications. The students volunteered for the course, and averaged 4 to 5 additional hours of homework per week. Requirements were grades of A or B in all regular classwork, two years of algebra, one year of geometry, and one year of physics, plus a high degree of interest in math and science.

USER EXPERIENCE OF ELECTRONICS IN INDUSTRY

The electronics industry in Great Britain formed in 1959 the Electronic Forum for Industry which, last May, held a conference to investigate the status of computer use among business organizations in that country. The transcript of the twelve papers is contained in a booklet now available from The Electronic Engineering Association, 11 Green Street, Mayfair, London W1, England. The papers covered data processing, numerically controlled machine tools, and instrumentation. Among the data processing group were descriptions of computer applications in inventory and production control and insurance accounting. While interesting, none of the applications is an innovation.

ELECTRONICS IN THE OFFICE

THE ACCOUNTANT, February 4, 1961; page 144

A series of ten filmstrips on electronic data processing is being produced by the Electronic Data Processing Division of The Institute of Office Management, 56 Victorial Street, London SW1, England. These filmstrips are being prepared specifically for the United Kingdom.

INTEGRATED DATA PROCESSING AND COMPUTERS

Report of O.E.E.C.

Recently the European Productivity Agency of the Organization for European Economic Co-Operation sponsored a Mission of highly experienced European experts to the U.S. Twenty-five experts from Austria, Denmark, France, Germany, Ireland, Italy, The Netherlands, Norway, Sweden and the United Kingdom spent the months of April and May, 1960 studying integrated data processing in this country. Its findings have been published in this report, and cover the extent of integrated data processing in the U.S. and Europe, and to what extent financing difficulties in Europe contribute to more careful initial planning. Also, the report shows the extent of the Government's role in computer research and development, educational facilities in U.S. and Europe for the use of computers, computer service centers in the U.S., and an examination of the sometimes disappointing results of computer use.

A copy of the report may be ordered from O.E.E.C. Mission, Suite 1223, 1346 Connecticut Ave., N.W., Washington 6, D.C. Price: $1.75.

I.D.P. AND COMPUTER MISSION REPORT

THE ACCOUNTANT, December 10, 1960; pages 750, 751

The conclusions and recommendations of the O.E.E.C. Mission of European experts to the United States are summarized from the group's report, "Integrated Data Processing and Computers."

The group believed that a central source of information for European business would be of advantage, and suggest a center modeled on the lines of the Netherlands ADP Centre be attempted. It was also noted that there seems to be greater difficulty in justifying the use of EDP in Europe than in the U.S. because of economic differences.

SELECTING COMPUTER PROGRAMMERS: A CONSERVATIVE APPROACH

Donald G. Livingston, Stevens Institute of Technology, Hoboken, N.J.
SYSTEMS AND PROCEDURES, January/February, 1961; pages 24-28

The selection of programers involves nearly every technical problem of selection theory. The reasons are that 1) there is no adequate definition of what a programer is or does; 2) there is an inadequate theory for defining the specific intellectual abilities a programer needs; 3) measures of programing efficiency are rudimentary, judgmental, and impressionistic. No test thus far devised is able to by-pass the basic problems of selection. The definition of a job should be in

specific, behavioral terms, and must tell, as exactly as possible, what a programer does on the job. Such a job description can then provide hunches about requirements, and it provides the personnel department with useful information for hiring, transferring, or identifying "likelies" from elsewhere in the firm. Also, a good job description may help management understand employee positions better and suggest ways to simplify or reassign work.

Use all possible information as selection basis

Effective selection requires the use of all available data about a candidate, including interview information, personnel records, references, resumes, transcripts, etc. However, any devise used as a source of information, must be shown to contribute valid information to improved selection. Simply because a device works in one place does not mean that it will have validity or significance for another employer or job.

Some investigators depend upon lists of traits, but these require skilled use, and listings of traits do not exist in a trustworthy form. Moreover, modern psychology opposes such a fractionating of the human totality.

In short, the best that can be done at present is to select on a basis of considered and collective judgment of several people, and then to attempt to observe and evaluate the new candidates on the job over a period of time, comparing the data collected during the selection period with performance. Two studies are presently being made for the Navy by the Electronics Personnel Research Group, Department of Psychology, University of Southern California. A unique problem which may arise in the selection of programing personnel, is the use of the programers elsewhere in the company after their responsibility in the programing activity is terminated.

WHEN MACHINES HAVE JOBS—AND WORKERS DO NOT

U.S. NEWS & WORLD REPORT, February 6, 1961; pages 76-78

Every year more people are entering the labor force, while at the same time the rate of output per man-hour continues to rise. The problem will be to find jobs for more workers when the existing labor force can produce goods at an ever-increasing rate. Automation has become so much a part of businesses such as the telephone system and certain government services such as Social Security, that it would be impossible to abandon it. The U. S. is therefore faced with three choices: 1) put up with a growing amount of joblessness; 2) cut the workweek to spread employment; 3) find new ways to expand the economy to absorb the new workers.

EDUCATION FOR BUSINESS DATA PROCESSING

Report prepared for Los Angeles City Board of Education

Proposed action for EDP education

A survey was made of the need for education in business data processing in the Los Angeles City School District. The survey indicated that in the junior colleges and adult schools there was a need for courses for those presently engaged in data processing work for broadening and upgrading their abilities in the field, and survey courses in business data processing for the non-specialist who is now in business or who is preparing for business employment. At present, it is felt there are adequate facilities available for instruction in specialized data processing skills at the primary level.

Accordingly, three proposals are made:

1. A General Survey Course in Business Data Processing. This course should be implemented by establishment of a workshop for instructors drawn from those presently in the L. A. school system.

2. An Experimental Two-Year Educational Program for Business Data Processing Specialists. This experimental program should be established in three city junior colleges, aimed at producing two-year graduates who can perform a useful function in the field of data processing.

3. Upgrading Courses for Other Colleges and Adult Schools in the City School System. It is suggested that these courses should include systems and procedures analysis, principles of programing, and/or computer principles.

A timetable for putting the program into effect is included in the report. Although the supply of reports is limited, school administrators who are interested in the report may request one from Mr. Gilbert S. Moore, Administrative Coordinator, Los Angeles City Board of Education, P. O. Box 3307 Terminal Annex, Los Angeles 54, Calif.

Applications

COMPUTER-CONTROLLED PRODUCTION

H. C. Jones, Convair Div., General Dynamics Corp.
PRODUCTION, February 1961; pages 80-83

Convair Division of General Dynamics Corp., Ft. Worth, has designed a production control system for 40,000 detail and assembly orders. The system consists of card-reading units in 97 work areas, connected to a data processing center. When an order is prepared, two punched cards are created. One is a standard IBM card listing the part number, serial number, schedule, quantity, work order and other significant information. This card is used to enter the order into the IBM 705 work-in-process file. The other is an edge-punched laminated Mylar-paper traveler card which accompanies the order through the shop.

Travel card locates each part in production flow

When an order arrives in each making-area, its Mylar traveler card is fed through a card reader unit in the area. The reader automatically transmits an identification code and serial number from the Mylar traveler. The information is received by one of six paper-tape punches near the computer. A special master clock punches the time into these tapes so only the most recent order location transaction is retained. When an order has passed through all its making-areas and reaches stores, a completion card is cut. Stock control men and expediters notify the system of a need for a part by initiating a shortage notice by part number. Reports are processed during the night so that the first shift has a daily work order report by which the day's work is planned, according to the priority shown for each part on the report.

About 375 orders are "lost" each day because of their being in flow between areas at the time data was being compiled, but these are located automatically within two or three days. Another five are located within 10 days. At the end of that time a print-punch card is issued by the computer for each one still missing. This card goes to the department which ordered the material. About half of these "lost" orders are already on the assembly and shipped, because expediters still tend to go after parts without regard for paperwork. Only about 1/3 of an order is lost for every 1000 processed each day. Expanded use of the system includes use of information from the master file to determine material costs distribution, and spare parts costs.

A PROGRESS REPORT ON EDP

Charles S. Diehl, Ordnance Tank-Automotive Command
SYSTEMS AND PROCEDURES, November 1960; pages 27-33

The Ordnance Tank-Automotive Command is now in its 5th year of EDP operation. A run-down of the supply and inventory control system is given, along with some special projects which have resulted from the system.

FINANCIAL WEATHER FORECASTS

SYSTEMS MANAGEMENT, January 1961; page 26

The Chesapeake and Ohio Railway's Financial Bureau issues a revenue report each day at noon, based on the previous day's operations. The report is derived from information gathered by the company's leased teletype network and processed by Univac. The report helps the company's investment men take advantage of short-term investments on a basis insuring the highest possible return. The company's planners are also able to project figures and forecast freight volume trends, maintenance programs, and many other activities. The system helped the C&O predict the 1958 recession far enough ahead to enable the company to save $7 million.

VISUALIZING MANAGEMENT REPORTS

Jack Murphy, United Air Lines
SYSTEMS MANAGEMENT, January 1961; pages 18-20

Two messages per take-off routed from the field to a data processing center contain all the information needed to keep United Air Lines management informed on operating efficiency. The raw data contained in the messages contains the following: First message--load dispatch (pounds of mail, express, freight, company material, baggage and customers)--used for pre-planning loading at subsequent stations; Second message--flight movement bulletin (trip number, date, plane number, station, when plane lands on runway, goes to gate, away from gate, takes off)--used for 45 statistical reports daily. The information is teletyped to the data processing center where it is prepared for a daily briefing period for executives the following morning. Each Tuesday an analysis is presented to the staffs by telephone hookup between San Francisco, Denver and Chicago. Each month 130 different management reports are compiled and sent to 172 different organizational elements, hand tailored for each department's use.

Programing

AUTOMATIC PROGRAMMING FOR COMPUTERS

O & M BULLETIN, December 1960; pages 271-276

Some advantages of automatic programing are: 1) simpler to learn; 2) separate parts of a program may be prepared independently; 3) debugging time is reduced; 4) programs are easier for those who did not write them to understand; 5) programs are more easily amended; 6) programing time and costs are reduced. Disadvantages are: 1) they require extra equipment or additional machine time; 2) as the systems advance they may become more difficult to learn than ordinary machine-language programing; 3) amendment of programs may become a lengthy process; 4) logical errors may be more difficult to trace; 5) the resulting program is usually less efficient than a manually prepared program. However, since the running time of a data processing system is controlled by the speed of input/output devices, the wasting of time in the automatic program will probably have little or no effect on overall processing time. Time-sharing systems will not allow this inefficiency, but it seems likely that the efficiency of automatic programing systems will improve along with such developments. Present users must weigh the possible advantages and disadvantages of automatic programing and which scheme is available for their particular machine before beginning the time-consuming machine-language programing.

COBOL AND COMPATIBILITY

Howard Bromberg, RCA Corp.
DATAMATION, February 1961, pages 30-34

COBOL, the Common Business Oriented Language developed by the CODASYL Committee under the Department of Defense, has proved its usefulness through the demonstration by Remington Rand and RCA last December. Different programs were written for each manufacturer's machine. These were then translated by COBOL and run by the computer for which they were not originally written. The Remington-Rand program was for a profit and loss analysis, written by an industrial organization; the RCA program consisted of a zero balance report and a cash sales report, written by a government agency.

It was found that the programs could be written with about 90% compatibility, due to the participation of both groups in the COBOL venture. The major compatibility considerations are: a procedure must be established that will facilitate and expedite the compatibility endeavor; and the continued improvement of the entire system must not be sacrificed for the sake of compatibility. The committee has decided that a single official version of COBOL should be issued once a year.

Equipment

THE APPLICATION OF SIGNATURE LOOK-UP SYSTEMS TO SAVINGS OPERATIONS

NABAC, The Association for Bank Audit, Control and Operation

A research project of NABAC has resulted in a published report presenting the various methods of signature look-up which may be considered by savings banks and other organizations which need to verify signatures during a customer transaction. The research covered five types of look-up: closed circuit television, facsimile scanning devices, microfilm, inscribing in passbook, and filing equipment for manual look-up. Following the descriptions of the various methods and equipment, the advantages and disadvantages of the various look-up concepts are presented.

Some advantages which are inherent in all the systems are:

1. All systems provide service at any window of any office regardless in which office the account was originated or housed.

2. The time required by the teller to obtain the signature is decreased, thus providing a general speed-up of customer service. These two advantages are the primary reasons for banks to pursue advance systems of signature verification. On the other hand, two minor disadvantages are present in systems other than those using original customer signature or invisible ink: fingerprint accounts are practically unrecognizable; and accounts which require frequent name changes become burdensome and should be excluded from the system.

For information about obtaining a copy of this report, write to: Mr. John Raleigh, Director, Technical Division, NABAC, 38 South Dearborn St., Chicago 3, Illinois.

SCRAMBLING DEVICE BLOCKS BANK PASSBOOK FORGERY

JOURNAL OF THE FRANKLIN INSTITUTE, January 1961; pages 75, 76

The RCA Signaguard is a device that produces a passbook signature as an unrecognizable mass of broken lines. When the passbook is presented at the teller's window, the device returns the signature to its original appearance for comparison with the customer's signature on the withdrawal slip. The system makes use of fiber optics--glass tubes that carry light and images around bends and corners. Each tube picks up a small segment of the signature and transmits it to the other end of the tube via a devious route. This scatters signature segments throughout the unintelligible mass that is imprinted on sensitized paper

at the other end of the tube. In the bank the fiber optics tube is reversed to bring the scrambled signature back to its original form. The bank teller can verify the customer's signature without having to leave his window. Other applications suggested for the device are identification cards for commercial bank depositors, for retail credit cards, and for in-plant security.

AND NOW—AN ALL-MAGNETIC COMPUTER

ISA JOURNAL, February 1961; page 32

Stanford Research Institute has developed "MAD," a magnetic multi-aperature device which is inherently unidirectional to data flow. The device promises the production of smaller, cheaper, more flexible, and more reliable computers.

Points of Interest

Burroughs Corporation has announced a new solid-state electronic information processing system, designed especially for automatic programing. The system is called the B5000. The system is problem-oriented, and includes ALGOL and COBOL along with a master control program.

The Office of Technical Services, U.S. Dept. of Commerce, has released nine translations of Soviet computer literature. For information, write to OTS, Washington 25, D.C.

A European Translation Center, sponsored by 12 member countries of the European Productivity Agency, has been established at the Technical University at Delft, The Netherlands. It will provide liaison among European countries handling Russian and East European translations. The Office of Technical Services TECHNICAL TRANSLATIONS, will be the U.S. announcement medium for the material collected by the center.

Datanamics, Inc., of 7400 Deering Avenue, Canoga Park, California, has designed a device called the Source Data Recorder, that can imprint and punch IBM cards at point-of-origin in preparation for automatic machine accounting. The machine is designed for use by gasoline stations, banks, hotels, restaurants, department stores, and others with a volume of credit card sales.

A new periodical in the field of documentation is the Journal of Chemical Documentation. In the first issue will appear the article "Information Theory and Other Quantitative Factors in Code Design for Document Card Systems," by Eugene Garfield, Director of The

Institute for Scientific Information, 1122 Spring Garden St., Philadelphia 23, Pa. Reprints of the article are available from the author.

RCA is offering without cost to American business an electronic sales-forecasting technique, developed for its own use. The technique is available in the form of a "do-it-yourself' manual of instructions, plus consulting assistance in applying the programing.

"Paperwork Management" is the most recent of the practical systems books written and published by H. John Ross of Office Research Institute, P. O. Box 744, South Miami, Florida. Price is $20.00. A free 10-day examination privilege is offered.

Operations Research, Inc. of Silver Spring, Maryland, has announced the establishment in their Santa Monica Office, 225 Santa Monica Blvd., of the Management Science Institute, a national center for study and application of new techniques in management science to management control and information systems. The Institute will specialize in management information and control systems such as PERT, which they created for the Navy Polaris missile development.

Comment

A STILL, SMALL VOICE IN BUSINESS EDUCATION

Over the past five or six years a few lonely voices have been heard exhorting business educators to wake up and survey their curricula in the light of present EDP development. Recently, two of these lonely voices have joined forces to establish SABE, the Society for Automation in Business Education. The organization, spearheaded by Dr. E. Dana Gibson of San Diego State College and Enoch J. Haga of Stanislaus State College, both of California, is a worthwhile and heroic effort to interest university administrators, professors, students, and the EDP profession in the need for curricula changes. The monthly SABE Data Processor newsletter is being published as a forum to let these people know what is happening (or not happening) in EDP education, to help teachers and instructors learn something about EDP in order to prepare themselves to include it in their courses, and to point out good study materials, articles and books, and theses written or in preparation.

List your thesis in SABE newsletter

The listing of theses each month, hopefully will stimulate interest in creative research being done by graduate students across the country (and abroad, too). The listing is expected to provide an information exchange so that good theses will be made available to others, and those needing research materials in the preparation of theses can make their needs known.

Requests for information and contributions to the thesis list may be sent to Mr. Enoch J. Haga, Assistant Professor of Business, Stanislaus State College, P.O. Box 1000, Turlock, California. Enquire about membership in SABE while you're about it.

Universities are slow in EDP

Dr. Gibson has been active for at least five years in searching out those colleges which are doing something about EDP in their business education curricula. Over the past six years he has made three surveys of 153 selected colleges and universities to see what progress is made.[1] The trend from the 1956 to the 1958 surveys was downward, and the trend from 1958 to 1960 was a slight upturn. Not a particularly encouraging picture. It appears that "considerable research needs to be carried out on a continuing basis to help schools and business to know what is being done to improve the present offerings and procedures. It is recommended that a national committee be formed for this purpose...."

Few universities are able to afford to buy a computer for each school or college, and some type of institutional coordination is needed. Also, many schools are not making the fullest use of the computers they do have. "Some kind of educational program should be instituted in all colleges and universities...to see that all faculty teaching and research members know what help a computer can give them in their work and then to educate those who want to do something about it."

Perhaps Dr. Gibson's own SABE is the organization that will begin such an interest. But it will require the cooperation of the professional groups and business and industry, working with SABE to break through the apparent apathy of the large majority of educational institutions.

REFERENCE

1. "Trends in the Educational Use of Computers in Schools of Business," E. Dana Gibson; published by Bureau of Business and Economic Research, San Diego State College, San Diego 15, California

Training

PERT Unified Integrated Management System Course

Date: April 3-7, 1961
Place: Santa Monica, California
Presented by: The Institute for Management Dynamics
Fee: $290
Content: Simulation-gaming, designed to provide operators of management information, reporting and control systems with necessary skills to install and operate a PERT (Program Evaluation and Review Technique) System.
Information: Operations Research Inc., Institute for Management Dynamics, 225 Santa Monica Blvd., Santa Monica, Calif.

One-day seminars on large scale Electronic Data Processing Systems

Dates: April 10, May 2, 23, June 6, 20, July 11, 1961
Place: Willow Grove, Pa.
Presented by: Philco Corp., Computer Division
Fee: None
Information: Philco Corp. Computer Division, Willow Grove, Pa.

Operations Research Special Two-Week Programs

June 5-16, 1961: Survey of Problems, Concepts and Methods of Operations Research; and Production and Inventory Control
June 19-30, 1961: Survey of Mathematical Techniques of Operations Research; and Mathematical Programming
Fee: $400 per two-week period
Information: Professor Russell L. Ackoff, Case Institute of Technology, University Circle, Cleveland 6, Ohio

University of Michigan, College of Engineering Summer Conferences: courses are offered in operations research, management sciences, and advanced data processing. For information, write to R. E. Carroll, 126 West Engineering Building, University of Michigan, Ann Arbor, Michigan.

Industrial Engineering Seminars

Date: June 13-16, 1961
Place: Department of Industrial and Engineering Administration, Sibley School of Mechanical Engineering, Cornell University
For whom: Operating management personnel in line supervision and staff positions in industrial engineering, production engineering, engineering administration, operations research, research and development, quality control, production control, cost control, materials management, purchasing, data processing, and the controller's function.
Information: J. W. Gavett, Seminars Coordinator, Department of Industrial and Engineering Administration, Upson Hall, Cornell University, Ithaca, New York

Engineering Executive Program, presented by University of California at Los Angeles

Date: Beginning September, 1961
Place: University of California at Los Angeles, California
Fee: $350 for each semester
Requirements: Applicants must meet the acceptance standards of the Graduate Division of UCLA, and must have at least 5 years full time industrial experience
Deadline: Applications must be submitted by March 1, 1961
The Engineering Executive Program, Dept. of Engineering, Room 4173C Engineering Bldg. Unit I, University of California, Los Angeles 24, California

Operations Research Development Program

Date: September 18, 1961 - January 26, 1962
Place: Case Institute of Technology
Fee: $1000
For whom: Intensive program at the graduate level for qualified scientists and engineers with industrial experience. Successful completion of the program is recognized by the award of a Certificate in Operations Research.
Information: Professor Russell L. Ackoff, Case Institute of Technology, University Circle, Cleveland 6, Ohio

Meetings

National Conference of American Society for Public Administration

Date: April 5-8, 1961
Place: Philadelphia, Pa. (Sheraton Hotel)
Theme: "Public Administration in an Era of Change" (includes a workshop on computer technology)
Information: American Society for Public Administration, 6042 Kimbark Avenue, Chicago 37, Ill.

Management Engineering Conference, sponsored by S. A. M. and A. S. M. E.

Date: April 6, 7, 1961
Place: New York City (Statler Hilton Hotel)
Theme: "Improving the Technologies of Managing for Profit"
Information: Society for Advancement of Management, 74 Fifth Avenue, New York 11, New York

Symposium on Decision and Information Processes

Date: April 12, 13, 1961
Place: Purdue University
Fee: $75
Information: Robert E. Machol, School of Electrical Engineering, Purdue University, Lafayette, Indiana

Conference on Systems and Procedures, sponsored by San Francisco Chapter, Systems and Procedures Association and University of California

Date: April 21, 1961
Place: San Francisco, California (Mark Hopkins Hotel)
Information: Robert L. Briggs, 28 Geary Street, San Francisco, California

Sixth Institute of Research Administration, sponsored by The American University, School of Government and Public Administration

Date: April 24-28, 1961
Place: Washington, D. C., The American University
Program: Topics for discussion will include, among others, significant new techniques in scientific information classification, storage and retrieval.
Information: Dr. Lowell H. Hattery, Director, Center for Technology and Administration, The American University, 1901 F. St., N. W., Washington 6, D. C.

1961 Detroit Business Show

Date: May 2-4, 1961
Place: Detroit, Michigan (Cobo Hall)
Information: The Detroit Business Show, 817 Penobscot Building, Detroit 26, Michigan

NOMA International Conference and Office Exposition

Date: May 7-11, 1961
Place: St. Louis, Missouri (Sheraton-Jefferson Hotel and Kiel Auditorium)
Information: W. H. Latham, National Office Management Association, Willow Grove, Pennsylvania

Western Joint Computer Conference

Date: May 9-11, 1961
Place: Los Angeles, California (Ambassador Hotel)

AIIE Annual Conference

Date: May 11, 12, 1961
Place: Detroit, Michigan (Sheraton-Cadillac Hotel)
Information: A. Patrick, Program Chairman, 28093 Wildwood Trail, Farmington, Michigan

Symposium of the Federal Government Accountants Association

Date: May 18-20, 1961
Place: Washington, D.C. (Hotel Shoreham)
Theme: "Changing Dimensions of Financial Management"
Information: Federal Government Accountants Association, 1523 L St., N. W., Washington 5, D. C.

ORSA National Meeting

Date: May 25, 26, 1961
Place: Chicago, Illinois (Sheraton Blackstone Hotel)
Information: Dr. Donald H. Schiller, Caywood-Schiller Associates, 203 North Wabash Avenue, Chicago 1, Illinois

Eighth Annual Symposium on Computers and Data Processing, sponsored by Denver Research Institute

Date: June 22, 23, 1961
Place: Estes Park, Colorado (Elkhorn Lodge)
Program: Invited and offered papers on Components and Devices, Logic Design, Philosophy of Computer Design, and Computers and Education
Information: For information about symposium and submission of papers write to: W. H. Eichelberger, Denver Research Institute, University of Denver, Denver 10, Colorado

NMAA National Conference

Date: June 28-30, 1961
Place: Toronto, Canada (Royal York Hotel)
Information: R. Calvin Elliott, Executive Director, National Machine Accountants Association, 1750 West Central Road, Mt. Prospect, Illinois

Annual Conference of Northwest Computing Association

Date: July 21, 22, 1961
Place: University of British Columbia, Vancouver, B. C.
Information: Conference Information, Northwest Computing Association, Box 836, Seahurst, Washington

8th Annual International Meeting of The Institute of Management Sciences

Date: August 23-26, 1961
Place: Brussels, Belgium (Palace of Congresses)
Information: TIMS, Box 273, Pleasantville, New York

Association for Computing Machinery National Conference

Date: September 5-8, 1961
Place: Los Angeles, California (Statler-Hilton Hotel)
Information: A. C. M. 1961 National Conference, Ben Handy, Litton Systems, 5500 Canoga Ave., Woodland Hills, Calif.

NABAC National Convention (The Association for Bank Audit, Control, and Operation)

Date: September 11-13, 1961
Place: Chicago, Illinois
Information: NABAC, 38 South Dearborn Street, Chicago 3, Illinois

International Systems Meeting

Date: October 8-11, 1961
Place: Cleveland, Ohio (Hotel Statler and Hotel Pick-Carter)
Program: "Systems Management in Transition"
Information: Systems and Procedures Association, 817 Penobscot Building, Detroit 26, Michigan

Computer Applications Symposium, sponsored by Armour Research Foundation

Date: October 24, 25, 1961
Place: Chicago, Illinois (Terrace Casino, Morrison Hotel)
Information: Robert B. Brausch, Armour Research Foundation, 10 West 35th Street, Chicago 16, Illinois

Institute on Electronics in Management, sponsored by The American University

Date: October 30--November 3, 1961
Place: The American University, Washington, D. C.
Information: Prof. Lowell H. Hattery, Director, Center for Technology and Administration, The American University, 1901 F Street, N. W., Washington 6, D. C.

TIMS-ORSA 2nd National Meeting

Date: November 8-11, 1961
Place: San Francisco, California (Jack Tar Hotel)
Information: The Institute of Management Sciences, Box 273, Pleasantville, N. Y.

References

DATA PROCESSING DIGEST does not provide copies of the original material digested or reviewed in this issue. The publishers' addresses are listed below for your convenience in writing to them for more complete information.

The Accountant
4 Drapers' Gardens
Throgmorton Ave.
London EC 2, England

Computers and Automation
815 Washington St.
Newtonville 60, Mass.

Datamation
10373 W. Pico Blvd.
Los Angeles 64, Calif.

ISA Journal
313 Sixth Avenue
Pittsburgh 22, Penn.

Journal of the Franklin Institute
20th and the Parkway
Philadelphia 3, Pa.

Management & Business Automation
600 W. Jackson Blvd.
Chicago 6, Ill.

N. A. A. Bulletin
505 Park Avenue
New York 22, N. Y.

O & M Bulletin
Treasury Chambers
Great George Street
London SW 1, England

Production
Box 1
Birmingham, Michigan

Systems Management
10 E. 40th St.
New York 16, N. Y.

Systems and Procedures Magazine
4463 Penobscot Bldg.
Detroit 26, Mich.

U.S. News & World Report
24th & N. Sts., N. W.
Washington 7, D. C.

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